REMARKS

Accompanying this amendment is a new power of attorney and change of correspondence address.

The amendment to the specification corrects a numbering error.

The rejections of claims 1-16 and 18-20 under 35 U.S.C. §102(e) as being anticipated by Ramirez et al. publication 2003/001136, and of claim 17 under 36 U.S.C. §103(a) as being obvious over Ramirez et al, are respectfully traversed. When the double block valve of Ramirez et al. as shown in Figs. 1, 2A and 2B is closed, the blocking assemblies or discs 40 and 50 define between them an enclosed space 70 of fixed volume. A pressure test port 80 communicates with the space 70, by means of which the pressure of fluid in the space may be measured. Two additional pressure test ports are provided, a port 82 in communication with an inlet portion 12 to the valve and a port 84 in communication with an outlet portion 16 from the valve, so that fluid pressures at the inlet and outlet can be measured. As taught at paragraphs 52 and 53, the monitoring scheme checks for positive or negative changes in the pressure of fluid in the enclosed space 70 that together with the pressures at the valve inlet and outlet enable a determination to be made of the integrity of the seals carried by the discs 40 and 50 and whether a disc seal is leaking and requires replacement. For the pressure monitoring scheme to work properly it would be necessary that leakage occur past only one disc 40 and 50 at a time, with the leaking disc then being repaired, and indeed that would inherently have to be the case since the purpose of a double block valve is to

provide redundancy to always protect against leakage through the valve when the valve is closed. Note that Ramirez et al. only determines whether a disc seal is leaking, but not how bad the leak is (the size of the leak) or how much fluid is leaking past the disc (the mass of the fluid leaking past). Simply put, Ramirez et al. does not teach an ability to quantify the size of a leak and the mass flow of fluid through the leak, as does applicants' claimed invention.

Both Ramirez et al. and applicants use three ports to monitor fluid pressure at three different points within a valve, but that is where the similarity ends. All of applicants' claims call for a structure for or method of detecting and quantifying the size of a leak path and/or the mass flow of fluid through a leak path in a fluid flow control valve when the valve is closed, and in so doing call for a valve structure that is quite unlike that disclosed by Ramirez et al.

Independent apparatus claim 1 is representative, and calls for a fluid flow control valve that is uniquely structured to detect and quantify valve seat leakage when the valve is in its closed position. The claim calls for a first means for measuring pressure immediately upstream of the valve seat, as well as an orifice of known, fixed dimension present when the valve is in its closed position and located downstream of the seat, through which orifice any fluid leaking past the seat flows. In addition, the claim further requires a second means for measuring pressure between the seat and orifice and a third means for measuring pressure immediately downstream of the orifice. These specific structural limitations are not found in the teachings of Ramirez et al.

The examiner considers the annular passageway 174 of Ramirez et al. as meeting the "orifice" limitation of applicants' claims, but applicants submit that it does not. As set forth in claim 1, any fluid leaking past the valve seat when the valve is closed is required to flow through the orifice. This is not the case in Ramirez et al. in which a substantially static condition exists in the space 70 and passageway 174 when the double block valve closes. While fluid might possibly enter the annular passageway, it would not flow through the annular passageway into and through the test port 80, which would be the only exit for the fluid from the annular passageway. The only way in which fluid leaking past a disc seal in Ramirez et al. could flow through the annular passageway 174 would be if the test port 80 were changed to accommodate outlet of fluid from the valve, but that is not contemplated by Ramirez et al. and in any event would result in elimination of one of the three pressure monitoring ports and loss of utility of the Ramirez et al. pressure monitoring scheme.

As Ramirez et al. do not have any structure that is the same as or equivalent to the "orifice" required by independent claim 1, that claim is neither anticipated by nor obvious over the reference and is allowable.

In addition, if solely for the sake of argument the annular passageway 174 of Ramirez et al. were considered to be an "orifice", Ramirez et al. still would not anticipate or make obvious the claim 1 invention, since the reference does not have structure that meets or is equivalent to the first, second and third pressure measuring means called for by the claim. According to the claim, applicants' valve has first means

for measuring pressure immediately upstream of the valve seat, which first means could perhaps be said to be met by the test port 82 of Ramirez et al. However, the claim also requires a second means for measuring pressure between the valve seat and the orifice, and while at first glance it might seem that the Ramirez et al. test port 80 provides such a second means, it in fact does not since the port 80 measures pressure on the downstream side of the orifice (passageway 174), with the orifice being located between the port and the seat. Further, claim 1 requires third means for measuring pressure immediately downstream of the orifice, and such third means is not satisfied by the remaining test port 84 of Ramirez et al., which measures pressure downstream of the discs 40 and 50, but not downstream of the orifice (passageway 174). Only the port 80 measures pressure downstream from the orifice (passageway 174). However, if the Ramirez et al. port 80 were considered to be the claimed "third means", then the port 84 would have to be considered as the claimed second means, in which case the claim requirements still would not be met because the port 84 would not serve the specified function of the second means, which is to measure pressure between the valve seat and orifice. Consequently, no matter how the test ports 80, 82 and 84 of Ramirez et al. are considered to correspond to the first, second and third pressure measuring means of claim 1, there is no arrangement that satisfies all of the claim requirements.

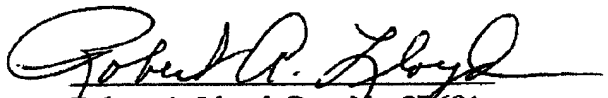
In other words, not only is the Ramirez et al. annular passageway 174 not an orifice within the meaning of claim 1, but even if it were the reference still would not teach or make obvious the first, second and third pressure measuring means called for

by the claim. Consequently, independent claim 1 and its dependent claims 2-14 are allowable.

Similar arguments apply to the patentability over Ramirez et al. of the remaining claims 16-20.

In view of the foregoing and as all of the claims in the application appear to be allowable, favorable reconsideration and early passage of the application to allowance are respectfully requested.

Respectfully submitted,



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